1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Field Butane
SYNONYMS:	Butane Mix
	Liquefied Petroleum Gas (LPG)
CHEMICAL NAME:	Liquefied Petroleum Gas
CHEMICAL FAMILY:	Petroleum Hydrocarbon
PRODUCT USE;	Diluent for pipelines
SUPPLIER :	Plains Midstream Canada
	Suite 1400, 607 – 8th Avenue S.W.
	Calgary, AB, T2P 0A7
Emergency Telephone:	1-866-875-2554
	Canutec (613) 996-6666 or *666 Cellular

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
DANGER!!

EXTREMELY FLAMMABLE. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may travel to source of ignition and flash back. Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases.

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY

Eyes:	Yes	Skin:	Yes	Inhalation:	Yes	Ingestion:	No

EYES

MODERATE TO SEVERE IRRITANT. Contact with liquid will cause cryogenic (freezer) burns or frostbite. Vapors may cause irritation to the eyes, conjunctiva, and mucous membranes, causing redness and tearing.

SKIN

SLIGHT TO MODERATE IRRITANT. Direct contact with the liquefied product causes burns & frostbite. Inhalation, skin and eye contact by liquid. Contact with liquid will cause cryogenic (freezer) burns or frostbite. High pressure skin injections are serious medical emergencies. The appearance of injury may be delayed for a few hours, but may cause tissue to become swollen, discolored and extremely painful; permanent damage or death may result without adequate medical treatment.

INGESTION

Propane is extremely unlikely to be swallowed and much more likely to be inhaled. If propane is swallowed severe burns will occur wherever propane contacts any tissues.

INHALATION

Vapors may cause nose and throat irritation, anesthetic effects and central nervous system (CNS) depression. Inhalation may result in dizziness, drowsiness, headaches. An increased pulse rate may occur. Hyperventilation may develop. headache, dizziness, mood disturbances, numbness of the extremities, sleepiness, mental confusion, poor judgement and coordination, and memory loss may occur.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS/CARCINOGENICITY

n-Butane has been reported to cause some symptoms in the central nervous system. Not known to contain carcinogens. .

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash) conditions. Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	%	CAS #
n-Butane	30 to 60	106-97-8
Iso-Butane	30 to 60	75-28-5
Butylene	30 to 60	25167-67-3

This product is a commingled stream from multiple petroleum facilities and is a complex mixture consistent with the definition within WHMIS regulation CPR section 2. The listed components are provided as guidance based on the available knowledge of the commingled stream.

4. FIRST AID MEASURES

EYES
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN
This material will cause cryogenic (freezer) burns if clothing is frozen treat by immersing in lukewarm water for 30 minutes. Remove clothing unless stuck to a burn area in which case cut around the burn leaving cloth fixed to the burn. Obtain medical attention immediately.

INGESTION
This product is unlikely to be ingested and more likely to be inhaled. DO NOT INDUCE VOMITING BECAUSE OF DANGER OF BREATHING LIQUID INTO LUNGS. Seek immediate medical attention. Rinse mouth with water. Administer 1 to 2 glasses of water or milk to drink. Never administer liquids to an unconscious person.

If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Seek medical attention. Monitor for breathing difficulty.

INHALATION
Remove person to fresh air. If person is not breathing, ensure an open airway and administer CPR. If necessary, provide additional air or oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
EXTREMELY FLAMMABLE GAS

FIRE AND EXPLOSION HAZARDS
EXTREMELY FLAMMABLE. · DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. Move containers from fire area if you can do it without risk. Containers may explode. Vapors are heavier than air and a flame can flash back to the source of leak very easily. The leak can be either a liquid or vapor leak. Under fire conditions the cylinders or tank cars may violently rupture. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. ·Vapors may travel to source of ignition and flash back. Vapours may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Container may explode in heat or fire. Runoff to sewer may cause fire or explosion hazard. Review NAERG Guide 115.

EXTINGUISHING MEDIA
SMALL FIRES: Use the following fire – extinguishers: dry chemical or CO_2.

LARGE FIRES: Water spray or fog. Stop flow of gas if possible. Let fire burn. Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. If fire becomes uncontrollable or container is exposed to direct flame from as far a distance as possible. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Consider initial downwind evacuation for at least 800 meters (1/2 mile). Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. If tank, rail car or tank truck is involved in a fire, ISOLATE for l600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

FIRE FIGHTING INSTRUCTIONS
Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Fire fighting activities that may result in potential exposure to high heat, smoke or toxic byproducts of combustion should require approved self-contained breathing apparatus (SCBA) with full-facepiece and full protective firefighting clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE YOUR FACILITY'S SITE SPECIFIC EMERGENCY RESPONSE PLAN if available.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate nonessential personnel. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. see Section 8 for personal protection. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

Carefully contain and stop the source of the spill, if safe to do so.

SMALL SPILLS: Prevent additional leaking of material if safe to do so. Remove or shut off

LARGE SPILLS: CALL Emergency Response Telephone Number. Isolate spill or leak area immediately for at least 50 to 100 meters (160 to 330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. The proper use of water spray may effectively disperse product vapors, preventing contact with ignition sources or areas /equipment that require protection. Do not discharge solid water stream pattern into the liquid resulting in splashing. Do not flush down sewer or drainage systems. Protect bodies of water by diking, if possible.

Caution: the application of water and/or fire fighting foam may cause the spilled liquid to liberate increased amounts of vapors, particularly when the water/foam temperature is warmer than the liquid. However, this effect may be desirable under certain conditions to evaporate a spill quickly.

Consideration should be given to environmental clean-up and waste material generation when determining if the use of large volumes of water is appropriate for non-fire emergency situations. Clean-up crews must be properly trained and must utilize proper protective equipment.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS

Handle as a flammable gas. Keep away from heat, sparks, and open flame. No smoking or open flame in storage, use of handling areas. Keep containers closed and clearly labeled. Ground all containers and transfer vessels when handling. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Use only with adequate ventilation. Avoid breathing vapors. Do not use as a cleaning agent. Wash thoroughly after handling. Electrical equipment should be approved for classified area. Emergency eye wash capability should be available in the vicinity of any potential splash exposure.

STORAGE PRECAUTIONS

Store in a well ventilated area. This storage area should comply with NFPA 30 ("Flammable and Combustible Liquid Code"). Butane in liquid form may be stored both above and below ground. Besides storage in liquefied form under its vapor pressure at normal atmospheric temperatures, refrigerated liquid storage at atmospheric pressure may be used. Such systems are closed and insulated and the liquid petroleum gas vapor is circulated through pumps and compressors to serve as the refrigerant for the system. Butane may be stored in pits in the earth capped by metal domes and in underground chambers. Avoid storage near incompatible materials.

The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not eat, drink or smoke in areas of use or storage. Do not use gasoline or solvents (naphtha, kerosene, etc) for washing this product from exposed skin areas. Waterless hand cleansers are effective.

Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

Ingredient Name	CAS #	Exposure Limit
n-Butane	106-97-8	ACGIH TWA= 1000 ppm
Iso-Butane	75-28-5	ACGIH TWA= 1000 ppm
Butylene	25167-67-3	Not applicable

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor and gas concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting.

EYE/FACE PROTECTION

Wear appropriate eye/face protection to prevent contact with the liquid that could result in burns or tissue damage from frostbite.

SKIN PROTECTION

Avoid repeated or prolonged skin contact. Insulated gloves should be used to prevent the potential of frostbite or cryogenic burns. Compatible protective equipment construction materials include: Neoprene, neoprene/styrene-butadiene rubber, nitrile rubber, polyurethane, Viton.

RESPIRATORY PROTECTION

This product is a known asphyxiant and air supplied respirators are required if there is a potential for decreased oxygen concentrations.

If exposure assessment indicates NO reduced oxygen content: use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, or any other circumstance where an air-purifying respirator may not provide adequate protection. When assessing the proper type of respiratory protection, also consider the occupational exposure limits applicable to individual ingredients.

Refer to CSA Standard "Selection, Use and Care of Respirators" (Z94.4-02) OSHA 29 CFR 1910.134, ANSI Z88.2-1992, and NIOSH Respirator Decision Logic for additional guidance on respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
A colorless, liquefied gas.
ODOR
Similar to gasoline. This product may be odorless for some individuals.

BASIC PHYSICAL PROPERTIES

FLASH POINT:	-60°C (-76 °F) Tagliabue Closed Cup. FLAMMABLE GAS
AUTOIGNITION:	287°C (550°F)
LOWER EXPLOSIVE LIMIT (%):	1.9%
UPPER EXPLOSIVE LIMIT (%):	8.5%
BOILING POINT:	-50°C (-58°F) @ 1 ATM
VAPOR PRESSURE:	1820 mm Hg at 25 deg C
MELTING POINT:	-138.2 °C
VAPOR DENSITY (Air = 1):	2.07 @ 0 ° C (AIR= 1)
SPECIFIC GRAVITY:	0.5788 @ 20°C
SOLUBILITY (H_2O):	Insoluble
PERCENT VOLATILES:	100
ODOR THRESHOLD:	1 - 6 ppm
OIL/WATER COEFFICIENT	log Kow 2.89
pH	Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID (STABILITY)
Material is stable under normal conditions but will rapidly volatilize. Avoid high temperatures, open flames, sparks, welding, smoking and other ignitions sources.

INCOMPATIBLE MATERIALS
Keep away from strong oxidizers, ignition sources and heat.

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

HAZARDOUS POLYMERIZATION: Will Not Occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC EFFECTS/CARCINOGENICITY
n-Butane has been reported to cause some symptoms in the central nervous system. Laboratory animals have exhibited a higher degree of narcosis when exposed to both butane and butylene (additive effect), than the degree of narcosis exhibited following exposure to butane or butylene alone.

Product carcinogenicity according to: NTP: No IARC: No ACGIH: No

12. ECOLOGICAL INFORMATION

Environmental Fate: n-butane is expected to volatilize rapidly from water surfaces and volatilization is expected to be the dominant fate process. An estimated Bioconcentration Factor of 33 was calculated for n-butane, using a log Kow of 2.89(1) and a regression-derived equation. According to a classification scheme, this Bioconcentration Factor suggests the potential for bioconcentration in aquatic organisms is moderate. The Koc of n-butane is estimated as 900(SRC), using a measured log Kow of 2.89(1) and a regression derived equation(2). According to a

classification scheme(3), this estimated Koc value suggests that n-butane is expected to have low mobility in soil. Provincial, state and federal regulations may require notification of spills. Keep out of sewage, drainage and waterways. Report spills and releases, as applicable, under provincial and local regulations.

13. DISPOSAL CONSIDERATIONS

Incinerate at a licensed disposal facility. Dispose of waste in accordance with all applicable federal, provincial, and/or local regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:	LIQUIFIED PETROLEUM GAS,
HAZARD CLASS:	2.1 Flammable Gases
TDG/DOT IDENTIFICATION NUMBER:	UN1075
TDG/DOT SHIPPING LABEL:	Flammable Gas
SHIPPING PAPER DESCRIPTION	LIQUIFIED PETROLEUM GAS, Class 2.1, UN1075

15. REGULATORY INFORMATION

Canada

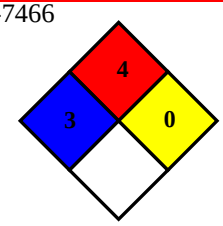
WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

Workplace Hazardous Materials Information Systems (WHMIS): This product has been classified in accordance with the hazard criteria of the CPR (Controlled Product Regulations), and the MSDS contains all of the information required by the CPR.
Class A, (Compressed Gas)
Class B, Division 1 (Flammable Gas)

All ingredients are listed on the Domestic Substance List (DSL)

16. OTHER INFORMATION

Issued by: Health and Safety Department, Plains Midstream Canada Telephone 403-261-7466
Technical Development by Deerfoot Consulting Inc. Telephone 403-720-3700



NFPA HAZARD RATING -	HEALTH:	1	Slight
	FIRE:	4	Extreme
	REACTIVITY:	0	Negligible

Acronyms:

ANSI	=	American National Standards Institute
ACGIH	=	American Conference of Governmental Industrial Hygienists
API	=	American Petroleum Institute
CEPA	=	Canadian Environmental Protection Act
HMIS	=	Hazardous Materials Information System
MSHA	=	Mine Safety and Health Administration
NAERG	=	North American Emergency Response Guide
NFPA	=	National Fire Protection Association
NIOSH	=	National Institute of Occupational Safety and Health
NTP	=	National Toxicology Program
OSHA	=	U.S. Occupational Safety & Health Administration
ppm	=	parts per million
SCBA	=	Self-Contained Breathing Apparatus
WHMIS	=	Workplace Hazardous Materials Information System - Canadian

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